SHORT COMMUNICATION

First record of the diamondback puffer, *Lagocephalus guentheri* Miranda Ribeiro, 1915, from Libyan waters

Sara A.A. Al Mabruk1*, Abdallah M. A. Belhassan2, Jamila Rizgalla3, Ioannis Giovos4

1 Zoology Department, Faculty of Science, Omar Al-Mukhtar University, Bayda, LIBYA
2 Marine Sciences Department, Faculty of Science, Omar Al-Mukhtar University, Bayda, LIBYA
3 Department of Aquaculture, Faculty of Agriculture, University of Tripoli, Tripoli, LIBYA
4 iSea, Environmental Organization for the Preservation of the Aquatic Ecosystems, Thessaloniki, GREECE

ORCID IDs: S.A.A.M. 0000-0003-0754-4951; A.M.A.B. 0000-0003-0656-4088; J.R. 0000-0002-5699-5321; I.G. 0000-0001-5733-0092

*Corresponding author: sara.almabruk@omu.edu.ly

Abstract

Two specimens of the diamondback puffer, *Lagocephalus guentheri*, were caught at the "Ras Alteen" coast East of Libya. This is the first record of the species from the Libyan waters, increasing the number of Lessepsian migrants that belong to the Tetraodontidae family within the Libya up to four species.

Keywords: Diamondback, *Lagocephalus guentheri*, Lessepsian migrants, Libyan water, Mediterranean

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The diamondback puffer, *Lagocephalus guentheri* Miranda Ribeiro, 1915 (Tetraodontiformes: Tetraodontidae), is a pufferfish, that is native to the Indian Ocean and the West Pacific up to the Red Sea. The species usually occurs in shallow waters, feeding on a variety of organisms (Froese and Pauly 2017). The species was observed for the first time in the Mediterranean Sea, where it is considered alien, by Kosswing (1950) and Ben-Tuviaa (1953), and it was not until five decades later when it was described off the coast of Tunisia (Charfi-Cheikhrouha 2004) and in the Marmara Sea (Tuncer et al. 2008) as *Lagocephalus spadiceus*, and then reported from the Egyptian coast of the
The difficulty in identifying *Lagocephalus* to a species level led in several cases to misidentification in the past. The most known misidentification case of *L. guentheri* Miranda Ribeiro, 1915 and *L. spadiceus* (Richardson, 1845), was cleared by Matsuura et al. (2011). Thus, currently it is suspected that all individuals from the Mediterranean Sea previously identified as *L. spadiceus* records might be wrongly identified and should be reexamined based on the new findings by Matsuura et al. (2011). Hereby, we present the first record of *L. guentheri* from Libyan waters.

A fisherman was contacted by scientists from Omar Al-Mukhtar University to provide pufferfish specimens for the scientific exhibition at the Faculty. On 19 April 2019, the fisherman caught three pufferfish specimens in Ras Al Teen (32°36'33.92"N 23°7'28.40"E; Figure 1). Of these, one specimen was identified as *Torquigener flavimaculosus* Hardy & Randall, 1983 and the other two as *L. guentheri* based on their morphological characteristics (Figure 2).
Following the description of Matsuura et al. (2011) the two individuals of *L. guentheri* were identified based on (i) the pale pectoral fins, (ii) the slightly lunar caudal fin with the apparent posterior extension medially that made it appear doubly emarginated and (iii) the coloration of the caudal fin, which is entirely dark-brown except for the dorsal and ventral white tips (Figure 2). The morphometric measurements of the collected specimens are given in Table 1.

![Figure 2. Two specimens of *Lagocephalus guentheri* reported in this study](image)

**Table 1.** The morphological measurements for the two specimens of *Lagocephalus guentheri* in this study

<table>
<thead>
<tr>
<th>Morphometric characteristic (cm)</th>
<th>Sample 1</th>
<th>Sample 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL (Total length)</td>
<td>36.6</td>
<td>29.2</td>
</tr>
<tr>
<td>SL (Standard length)</td>
<td>31.9</td>
<td>24.7</td>
</tr>
<tr>
<td>FL (Fork length)</td>
<td>35.2</td>
<td>27.5</td>
</tr>
<tr>
<td>BD (Body depth)</td>
<td>10.7</td>
<td>7.6</td>
</tr>
<tr>
<td>HL (Head length)</td>
<td>9.4</td>
<td>8.0</td>
</tr>
</tbody>
</table>

The Mediterranean Sea is faced with severe invasions of marine organisms that are introduced through a variety of pathways. The Suez Canal is considered as the most prevalent pathway (Katsanevakis et al. 2013) for the majority of the Lessepsian migrants spreading throughout the Eastern basin (Katsanevakis et al. 2013) and a few expanding their distribution towards the central Mediterranean. Alien species reach the Libyan waters with a variety of pathways, primarily via secondary dispersion from neighboring countries, e.g. Tunisia or Malta (Rizgalla et al. 2018) or via shipping traffic (Rizgalla et al. 2019b). In this case, we suspect that the species might have reached Libyan waters via range expansion from Egypt (Farrag et al. 2016).

The recent reports of several Lessepsian species from Libya (central Mediterranean) (Shakman et al. 2017; Al Mabruk et al. 2018; Rizgalla et al. 2018)
2018; 2019a; 2019b; Al-Mabruk and Rizgalla 2019; Osca et al. 2020), might suggest that thermophilic species find suitable conditions for their establishment and further dispersal in Libya’s warm waters (Shakman et al. 2017).

Together with the present record, the inventory of the alien species of Tetraodontidae found in Libya increased to five species; *Sphoeroides pachygaster* (Müller & Troschel, 1848) reported in 1993 (Shakman et al. 2017), *Lagocephalus sceleratus* (Gmelin, 1789) reported in 2006 (Kacem-Snoussi et al. 2009), *Lagocephalus suezensis* Clark & Gohar, 1953 reported by Ben Abdallah et al. (2011), *T. flavimaculosus* Hardy & Randall, 1983 reported in 2018 (Al Mabruk et al. 2018).

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**References**


